State Of California The Resources Agency of California

Memorandum

Date : December 22, 2003
Telephone: (916) 653-1245

To : James D. Boyd, Presiding Commissioner
Robert Pernell, Associate Member

File: PMPD Comments

From : California Energy Commission -
1516 Ninth Street
Sacramento, CA 95814-5512

James W. Reede, Jr., Ed.D
Energy Commission Siting Project Manager

Subject : **STAFF SUPPLEMENTAL TESTIMONY**
MID ELECTRIC GENERATION STATION (03-SPPE-01)

On December 5, 2003, the Committee assigned to review the MID Electric Generation Station Project (MEGS) SPPE issued an Order reopening the evidentiary record for the purpose of receiving testimony on the topic of Energy Resources. Staff submits the attached supplemental testimony for consideration.

ENERGY RESOURCES

Supplemental Testimony of Steve Baker

INTRODUCTION

The PMPD incorporates a Condition of Exemption (**ENERGY RESOURCES-1**) that would limit the MEGS to 5,000 operating hours per year in order to mitigate a perceived waste of energy resources. Staff believes such a limitation is unnecessary, and would needlessly compromise the project's ability to achieve its objectives, as staff has previously identified in its November 25, 2003 comments on the PMPD, and which is now incorporated into this testimony as Attachment A.

THE NEED FOR OPERATING FLEXIBILITY

As a utility with current responsibilities to the CA ISO (Attachment B)[1] for maintaining system reliability, and with plans to form its own system control area in the future, MID requires a certain number of megawatts of flexible power. This flexible generation capability will provide ancillary services such as peaking power, spinning reserve, ready reserve, system regulation (voltage and frequency control), VAR support and Automatic Generation Control. The MEGS is intended to serve these needs (refer to the Transmission System Engineering portion of Attachment A).

MID currently owns and operates several power plants. For example, the Woodland combined cycle plant is new and represents an energy-efficient modern baseload power plant. The McClure peaking plant, on the other end of the spectrum, is an aging simple cycle peaking plant that is relatively inefficient. The MEGS would provide MID with a new, highly efficient peaking plant that can work in conjunction with MID's other energy resources to provide the requisite peaking power and ancillary services, reducing the need to run old, inefficient plants such as McClure.

MID's current plans for the MEGS include operating in round-the-clock, baseload mode for up to three months during the summer, when MID's system load is at a sustained peak due to air conditioning loads and the power demands of agricultural canning facilities. Were the MEGS intended solely for such baseload duty year-round, it would be easy to justify installing a combined cycle plant, with its greater fuel efficiency in place of this simple cycle plant. But the MEGS must still be available at other times of the year, to provide the peaking power and ancillary services described above. A combined cycle plant, with its inflexible operating characteristics, is incapable of achieving these objectives.

One factor that will certainly affect how much of the time the MEGS operates in baseload are both planned and unplanned outages of MID energy supplies and generating resources. Contracts for purchased power will certainly expire and be replaced within the ensuing 30 years; it is impossible at this time to predict exactly what will replace them and when. Power plants require planned maintenance outages; that occasionally require more time to complete than was forecast. Power plants will also

[1] Note that CA ISO Operating Procedure E-516 specifically requires that MID respond to CA ISO calls for support. To view E-516, visit http://www.CA ISO.com/docs/2001/01/04/2001010412590719897.pdf

break down resulting in unplanned outages of absolutely unpredictable timing and duration. During such swings in system resource availability, the MEGS will likely be needed for varying amounts of baseload duty.

In order to be available to serve these diverse needs, the MEGS must be available to operate when needed. Were the Commission to limit the number of hours in any one year that the MEGS could operate, it is probable that, in some of the subsequent years, the plant would run out of permitted operating hours before satisfying MID's peaking power and ancillary services needs for the year. Such a limitation could jeopardize the utility's system reliability and its availability to CA ISO (refer to the Energy Resources portion of Attachment A).

CA ISO operating procedures (Attachment B) can require MID to provide energy from thermal generation resources within specified parameters, with as little as 10 minutes advance notice, in the event of specific transmission constraints, voltage problems, Stage 1 or greater Emergencies. The simple cycle configuration proposed for MEGS is the only equipment that can meet the time requirements necessary for CA ISO demands and still meet internal generation needs.

ADAPTING TO FUTURE CHANGES

The MEGS is intended to serve MID for 30 years. During that time, MID's system will certainly change. Load will grow at a rate that can only be predicted with some level of uncertainty. MID's responsibility for maintaining control and stability of its own system will likely grow; its commitments to support other load areas in California, during both normal cycles and emergencies, will also likely change over time. Other generating resources will become available in manners and with timing difficult to foresee, and currently available generating resources will someday no longer be available.

It is unreasonable to require that MID be able to determine, at this time, exactly how the MEGS will be operated for the next 30 years. It is possible that the plant might be called upon to operate up to 8,760 hours for one or more years, or substantially less than expected in other years. Even if such operating patterns emerge, no alternative would fulfill the project's objectives and represent a more efficient use of energy. Accordingly, it is staff's opinion that the MEGS would not represent a significant adverse impact to energy resources.

INCENTIVES FOR FUEL EFFICIENCY

MID has testified that the decision to build MEGS as either a simple cycle or a combined cycle facility is practically a wash (9/2/03 Evid. Hrg., RT pp. 19-20). However, once the project is built, the cost of fuel acts as a relentless motivator to minimize fuel consumption. Throughout the life of the MEGS, MID will have the opportunity to reevaluate its system needs and how the MEGS satisfies those needs. Should the MEGS no longer make sense as a supplier of peaking power and ancillary services, MID could dispatch it less, or place it in reserve. Should the MEGS become practical for satisfying baseload energy needs, and should MID acquire other means of satisfying its peaking power and ancillary services needs, MID would have the option of converting the plant to combined cycle with its inherently high fuel efficiency. Such

decisions would be driven in large part by economics, and the price of natural gas acts as an ongoing incentive to minimize waste of fuel.

CONCLUSION

Given that the MEGS must exhibit the operating flexibility that only a simple cycle plant can provide, MID has chosen the most efficient possible plant, a pair of GE LM6000 Sprint gas turbine generators. No more efficient alternative is available to serve the demanding objectives of this project; therefore, staff believes that the project will not use energy in an inefficient, unnecessary and wasteful manner. Should the MEGS eventually be required as a baseload facility, and no longer be needed to provide peaking power and ancillary services, the project has been engineered to allow for its conversion to a highly efficient combined cycle plant.

The MEGS will not present a significant adverse impact on energy supplies throughout its lifetime, even if it is operated in baseload mode for extensive periods of time. It will not create an inefficient, unnecessary or wasteful consumption of energy. Its availability for peaking duty and provision of ancillary services makes its inclusion in the MID system essential. No possible alternatives exist that could accomplish the project's objectives while reducing the use of fuel.

For the reasons stated above and excerpted from its November 25, 2003 PMPD Comments, staff believes that a limit on annual operating hours is both unnecessary and inadvisable.

ATTACHMENT A

State Of California The Resources Agency of California

Memorandum

Date : November 25, 2003
Telephone: (916) 653-1245

To : James D. Boyd, Presiding Commissioner
Robert Pernell, Associate Member

File: PMPD Comments

From : California Energy Commission -
1516 Ninth Street
Sacramento, CA 95814-5512

James W. Reede, Jr., Ed.D
Energy Commission Siting Project Manager

Subject : **STAFF PMPD COMMENTS, MID ELECTRIC GENERATION STATION (03-SPPE-01)**

On November 7, 2003, the Committee assigned to review the MID Electric Generation Station Project (MEGS) SPPE issued its Presiding Member's Proposed Small Power Plant Exemption Decision (PMPD) and Notice of Intent to Adopt a Mitigated Negative Declaration (NOI), requesting comments for the record of this proceeding. Staff is providing comments on the topics of energy resources, transmission system engineering, air quality, biological resources, cultural resources, general conditions of exemption, hazardous materials management, noise, and visual resources.

EXCERPTED

EXCERPTED

ENERGY RESOURCES

The Committee has proposed to limit project operation to 5,000 hours per year because:

- a project allowed to potentially operate for 8,760 hours per year is not a peaking facility; and
- a simple cycle project allowed to potentially operate 8,760 hours per year would waste significant amounts of energy (PMPD, p. 18).

Staff believes such a limit on plant operation is unnecessary because:

- the proposed project is a peaking facility, and will be required to provide the services (peaking power and ancillary services) that only a peaking facility operating without restrictions can provide;
- a 5,000 hour per year limitation on operation could prevent the project from providing the ancillary services necessary to ensure system reliability. MID has selected this project to provide quick response to changes in system load, and to maintain system stability during unplanned outages or system disruptions; and
- the proposed project will not, in fact, waste significant amounts of energy. MID has chosen the most efficient power plant design to provide the needed service.

The Project Must Be Available to Operate When Needed as a Peaking Facility

Staff has testified that the proposed project, two simple cycle gas turbine generators, is well suited to satisfying the project's objectives (Exhibit 22, p. 6-3). Those objectives are to "…be a peaking facility that will…meet [MID's] growing native load, and provide other ancillary services and benefits to MID" (Exhibit 1, p. 1-1). Staff further testified that the electric system needs that MID will satisfy with this project require a simple cycle power plant; these needs cannot be met with a combined cycle plant (9/2/03 Evid. Hrg., RT pp. 130-132), and the Committee agreed with this (9/2/03 Evid. Hrg., RT pp. 136-137).

The applicant has also testified at length to the need for a peaking facility. Mr. Hill, the MID Project Manager, testified that the MID Board, after weighing its staff's recommendations, approved pursuing a simple cycle power project (9/2/03 Evid. Hrg., RT pp. 13, 16-17, 19-20). Mr. Kreamer, the MID Manager of Long-Term Resource Planning and Development, explained MID's need for peaking power and ancillary services, which can be provided only by a simple cycle peaking facility, and not by a combined cycle facility (9/2/03 Evid. Hrg., RT pp. 149-150, 154-155, 157-158).

The applicant has testified to the fact that the project must be available not only to serve predicted load, but to act as an additional resource in the event MID is called upon to serve other loads (9/2/03 Evid. Hrg., RT p. 17, lines 2-8). Emergencies such as the unexpected loss of another MID generating asset, the unexpected extension of a scheduled outage of another MID generating asset, or the unplanned appearance of a transmission system constraint would necessitate operation of the project beyond

currently planned hours. MID's responsibility to maintain power quality and reliability on its system render the immediate and unrestricted availability of additional resources, such as the MEGS, essential. The Committee's proposed operating limit of 5,000 hours per year could impair the ability of MID to maintain system reliability.

In light of this, staff believes the record shows that MID requires peaking power and ancillary services that only a peaking power plant can provide, and may require them at unplanned times and for unpredictable durations.

The Proposed Project Will Not Waste Significant Amounts of Energy

The provision of ancillary services is one of the project's stated objectives (Exhibit 1, pp. 1-1, 1-3, 7-1, 9-11). These services were described by MID's Mr. Kreamer (9/2/03 Evid. Hrg., RT pp. 149-151, 154-158) and by staff (9/2/03 Evid. Hrg., RT pp. 121-122, 130-132, 134-136). Ancillary services include such functions as Automatic Generation Control, voltage control, frequency control, spinning reserve, and VAR control, functions that can only be provided by a simple cycle machine that responds instantly to control system demands. It is impossible to estimate in advance how often MID would need to operate MEGS in order to provide these services over the life of the project.

Staff has testified that the proposed gas turbine generators, two General Electric LM6000 Sprint machines, would meet the project's objectives and produce power at efficiency levels from one to three percentage points greater than the feasible alternatives. These machines are the most efficient available to meet the project's objectives (Exhibit 22, pp. 6-3 to 6-4).

Staff has previously concluded that, even though the project will operate for three months of the year in round-the-clock service, the project would not constitute a significant adverse impact on energy resources (Exhibit 22, pp. 6-5 and 6-6). Given that a combined cycle plant cannot serve the project's objectives of providing peaking power and ancillary services, there is no more fuel efficient alternative available to serve the project's objectives. Accordingly, the project would not constitute a significant adverse impact on energy resources were it to operate up to 8,760 hours in a year.

Conclusion and Recommendation

Staff believes that the project, as proposed, will not cause significant adverse impacts on energy resources. Accordingly, staff concludes that a limitation on annual operating hours is unnecessary. Staff recommends that the limit of 5,000 hours per year be deleted from the PMPD.

TRANSMISSION SYSTEM ENGINEERING

Pgs 17 & 18: The Proposed Decision argues that the record concerning the impact on Energy Resources is deficient. Staff respectfully disagrees. The MID system is short of local generation and reactive power, and its import capability is also limited. The addition of the MEGS project will significantly improve the reliability performance of the MID system to meet NERC planning standards and WSCC reliability criteria and reduce

import requirements, (Ex 22, pg 16-7). The simple-cycle configuration is the most efficient in response to system anomalies. More reactive power will be available and the voltage profile will improve. Staff concurred with the MID study that the addition of the MEGS generation would not degrade system transient stability performance, nor would it contribute to system instability. Staff also found that the MEGS project would help stabilize the MID transmission system (Ex 22, pgs 16-6). Also, because the MEGS project is to be sited near the local load and imports into its area would be less, overall system losses very likely would be reduced (Ex 22, pgs 16-4).

This potential need for fast response to system destabilization and the need for local generation, reactive power and import reduction could require the maximum flexibility that 8760 hours would allow. The record clearly demonstrates that there are significant benefits due to the proposed operation of MEGS. Staff believes there is no impact that relates to the wasteful or inefficient use of energy resources and that the subject benefits counter-balance and outweigh any potential negative impacts.

ATTACHMENT B

CALIFORNIA ISO California Independent System Operator	OPERATING PROCEDURE	Procedure No.	E-516
		Version No.	2.1
		Effective Date	12/16/03
Dispatch of Muni / Western Reserves and Excess Energy		**Distribution Restriction: NONE**	

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PURPOSE

Sets forth the actions to be taken by the CAISO, and the affected parties, in the event of a Stage 1 Emergency and to prevent a greater Emergency, pursuant to specified CAISO procedures referenced, or to mitigate transmission constraints, which could otherwise lead to curtailment of firm Load. The CAISO may Dispatch, under the conditions described below, Energy from Excess Capacity and Energy from Spinning and Non-Spinning Operating reserves associated with Generating Units owned or controlled by various municipalities (Muni's), and the Western Area Power Administration (Western) which operate within the CAISO's Control Area. This Procedure only applies to dispatching Energy from such Generating Units which are **internal** to the subject systems and which are otherwise not bid in or made available through the market processes. Attachment A provides background information underlying this Procedure.

PROCEDURE

1. GENERATION INFORMATION REPORTING

The following parties are intended to participate in the reporting of Generation information under this procedure. Such reporting is intended to be by direct reporting to the CAISO, but may be reported through PG&E in accordance with existing contractual relationships. The information reporting contacts within the respective organizations are listed in Attachment B along with the pertinent phone and e-mail contact information.

- City and County of San Francisco (CCSF)
- City of Redding (COR)
- Modesto Irrigation District (MID)
- Turlock Irrigation District (TID)
- Western Area Power Administration (Western)

1.1. Day Ahead Generation Information Reported to the CAISO

By 2000 hours prior to the operating day, the Muni's, and Western will provide directly to the CAISO, or alternatively through PG&E, a 24-hour forecast of at least the following information:

- Internal system Generation that would be available to generate during the forecast period.
- Internal system Generation scheduled to meet load and other obligations.

- Spinning and Non-Spinning Operating Reserves and upward-regulation reserves allocated on internal Generation that can be loaded within 10-minutes in the event of or to prevent Stage 2 Emergency conditions.
- Excess Energy production capability from internal Generation that could be made available during Stage 1 Emergency conditions.

This information will be provided in spreadsheet form and transmitted to the CAISO electronically by e-mail to: **GenDesk@caiso.com**. The information will be provided in the format illustrated in Attachment C (Excel file), or equivalent format as the information supplier may elect to use if such equivalent format already exists and presents at least the above identified information.

1.1.1. No Obligation to Provide Excess Energy

The forecast of Excess Energy production capability from internal Excess Capacity is not a commitment and does not create an obligation to supply such Energy. The forecast of Excess Energy is considered for planning and preliminary scheduling purposes although it may not be available in real-time at the time of need by the CAISO due to previous commitment of the Energy elsewhere by the Generation owner.

1.1.2. Revising Day Ahead Generation Information Reported

If forecasted conditions significantly change after submittal of the initial information, such as Generator outages or sales or commitments of Excess Generation, the supplying entity will update its forecast by sending e-mail to the CAISO with the revised information.

1.1.3. For Muni's With Interconnection Agreements With PG&E

For Muni's, which have IA's with PG&E, and for which PG&E acts as Scheduling Coordinator, the Muni's will submit the requested information to the CAISO in addition to submitting the information to the PG&E TOC Pre-Scheduling Group. This includes the following Muni's:

- City and County of San Francisco (CCSF)
- Modesto Irrigation District (MID)
- Turlock Irrigation District (TID)

1.1.4. For City of Redding

For the City of Redding, which has an IA with Western, and for which WAMP acts as the Scheduling Coordinator, the City of Redding will submit the requested information to the CAISO in addition to submitting the information to Western.

1.1.5. For Western Area Power Administration

For Western-controlled Generating resources in the CAISO Control Area, Western will provide the CAISO and PG&E UES with Western's standard CVP report, which contains the required information.

1.2. Day Ahead Generation Information Summarized by the CAISO

After receipt of the Generation information from each of the entities noted above, the CAISO combines and summarizes the information in a common spreadsheet, covering each of the entities individually, and in a cumulative total summary. The CAISO will e-mail a copy of this information to the PG&E TOC and UES so that both the CAISO and PG&E real-time operations and scheduling personnel will have a common information reference from which to work when dispatching a Muni or Western Energy as part of the Out-of-Market call process described in Section 2.

2. DISPATCH INSTRUCTIONS FOR AVAILABLE ENERGY (OUT-OF-MARKET CALL)

The CAISO will only issue a Dispatch instruction for available Energy after:

- All Generation bid into the Market, with the exception of Operating Reserves, has been exhausted,
- The CAISO must resort to Out-of-Market calls as part of a Stage 1 or greater Emergency, or
- To mitigate transmission overload or voltage problems.

For mitigation of transmission overload or voltage problems, this first requires the use of only those market resources, which can significantly mitigate the transmission problem. Dispatch instructions for available Muni and Western Energy as an Out-of-Market resource will be issued with the understanding that the CAISO will settle Energy payments each hour with the Scheduling Coordinators for the respective Energy suppliers at the uninstructed interval price. Muni or Western Generation, or portions thereof, which are bid into the

Market, are not covered by this Procedure and will be Dispatched and settled based on prevailing Market practices.

2.1. For Excess Energy Requests

The CAISO will only issue Dispatch instructions for Excess Energy from the Muni's, and Western in the event of a:

- Stage 1 or greater Emergency, or
- Specific transmission constraint or voltage problem that, if not mitigated, could result in curtailment of load.

2.2. For Reserve Energy Requests

The CAISO will only issue Dispatch instructions for reserve Energy from the Muni's, and Western in the event of or to prevent a:

- Stage 2 or greater Emergency, or
- Specific transmission constraint or voltage problem that, if not mitigated, could result in curtailment of load.

2.3. CAISO Generation Dispatcher Identifies Form of Energy Called

The CAISO will indicate whether the Dispatch Instruction is for:

- Excess Energy from internal Generation.
- Energy from Operating Reserves carried on internal Generation, or
- For all Energy available from internal Generation.

Excess Energy identified pursuant to the information reported under Section 1 can be called upon at any time pursuant to this Section 2. However, Excess Energy will only be provided on an as-available basis and within the time frame and under the conditions as determined by the supplying entity. Energy requested from Operating Reserves can be called upon without prior notice and shall be deliverable within 10-minutes.

2.4. CAISO Generation Dispatcher Identifies Time Requirement & Allocation

The CAISO Generation Dispatcher will specify the hours for which the Energy is requested and will identify the total Energy requirements and allocation of Energy calls. Where calls for Excess Energy or Energy from Operating Reserves are for less than the total Energy available from all sources, allocation of the Energy to the specific providers will be at the CAISO's sole discretion based on the most practicable, efficient,

and expedient means of acquiring the requested Energy based on the information provided in accordance with Section 1. Where the request for Energy is made due to a transmission overload or voltage constraint, the CAISO will issue Dispatch instructions for specific suppliers to provide the Energy based on their locational ability to alleviate the transmission overload or voltage problem.

2.4.1. Priority of Energy Dispatch From Various Sources

Dispatch of Energy for Control Area resource deficiencies should be made according to the following guidelines to the extent the situation warrants:

- Energy from thermal Generating resources (e.g. steam or gas turbine) should be accessed first.
- Energy from hydro resources (e.g. CCSF and Western Generation) should be scheduled last, as the control area resource deficiencies become worse.

2.4.2. Constraints of Energy Dispatch From Various Sources

Dispatch of Energy from the Muni's and Western may be subject to the operational constraints as identified in Attachment D for the specific entities supplying the Energy.

2.5. CAISO Generation Dispatcher Calls For Energy

The CAISO Generation Dispatcher will call the appropriate contact points to Dispatch Energy from the Muni's and Western. A list of the appropriate contact points and their phone numbers are given in Attachment E.

2.5.1. Dispatch Instruction For Muni's In PG&E Service Territory

For Muni's in the PG&E service territory (PGAB as Scheduling Coordinator), the CAISO Generation Dispatcher will call PG&E Transmission Operations Center (TOC) and request specific hourly Generation amounts, and the type of Energy requested pursuant to Section 2.3, from specific Muni's based on information provided in Section 1. The TOC will receive the CAISO Dispatch Instruction and relay the Dispatch instruction to the various Muni's. Those entities receiving such Dispatch instructions will immediately Dispatch the Energy, subject to availability or constraints that may apply. Energy that is subject to unavailability or constraints will be fully communicated to the CAISO and confirmed by the CAISO before the Dispatch instruction is implemented.

2.5.2. Dispatch Instruction For The City Of Redding

For the City of Redding, the CAISO Generation Dispatcher will call Western (WAMP as the Scheduling Coordinator) to Dispatch the requested Energy. Western will contact the City of Redding and will specify the amount of Energy requested, the hours for which the Energy is requested, and the type of Energy requested pursuant to Section 2.3. The City of Redding will immediately Dispatch Energy from its resources, subject to availability or constraints, which may apply. Energy that is subject to unavailability or constraints will be fully communicated to the CAISO and confirmed by the CAISO before the Dispatch instruction is implemented.

2.5.3. Dispatch Instruction For Western

For Western's resources, the CAISO Generation Dispatcher will call PG&E UES. UES will contact Western and will specify the amount of Energy requested, the hours for which the Energy is requested, and the type of Energy requested pursuant to Section 2.3. Western will immediately Dispatch the Energy from its resources, subject to availability or constraints that may apply. Data regarding Energy that is subject to unavailability or constraints will be fully communicated to the CAISO and confirmed by the CAISO before the Dispatch instruction is implemented.

SUPPORTING INFORMATION

Affected Parties

- California ISO
- Pacific Gas and Electric
  - Transmission Operations Center (TOC)
  - PG&E Scheduling Coordinator
  - Utility Energy Services (UES)
- Municipalities
  - City and County of San Francisco (CCSF)
  - City of Redding (COR)
  - Modesto Irrigation District (MID)
  - Turlock Irrigation District (TID)
- Western Area Power Administration (Western)

Responsibilities

Party	Responsibility
CAISO Grid Operations	Collects and summarizes Generation forecast information provided by the Munis and Western. During Stage 1 Emergencies, initiates Out-Of-Market calls to obtain Muni Excess Energy. During Stage 2 Emergencies, initiates Out-of-Market calls to obtain Muni Operating Reserve Energy.
Muni's & Western	Submit Generation forecasts on a daily basis. Provide Energy from internal generation when requested by the CAISO through the Out-of-Market call process.
PG&E	Perform data submittals of Generation forecasts for Munis not directly reporting information to the CAISO. Forward Dispatch instructions from the CAISO to the Munis, and Western and confirm back to the CAISO amounts of Energy actually scheduled for delivery.

References

Resources studied in the development of this procedure and that may have an effect upon some steps taken herein include but are not limited to:

- CAISO Tariff
- CAISO Operating Procedure E-508 Electrical Emergency Plan

Policy

It is the policy of the CAISO to assure that all Generation Schedules, Operating Reserves, and unused Generation capability associated with Non-Participating Generators within the CAISO's Control Area be fully accounted for and documented on an ongoing basis. The CAISO deems this necessary so that the CAISO can readily make Out-of-Market calls on the Excess Generation and Operating Reserves in the event of Emergencies or transmission constraints. It is further the CAISO's policy to work through the existing Interconnection Agreements involving PG&E, the Muni's, and Western to assure that the proper documentation, accounting, and settlements are achieved and that the available Energy is provided when the CAISO must make Out-of-Market calls during Emergency situations.

Definitions

Unless the context otherwise indicates, any word or expression defined in the Master Definitions Supplement to the CAISO Tariff shall have that meaning when capitalized in this Operating Procedure.

The following additional terms are capitalized in this Operating Procedure when used as defined below:

Excess Capacity	Capacity from operable Generation in the CAISO Control Area and internal to the supplying system that is beyond that needed to serve load, scheduled commitments, or Operating Reserves.
Excess Energy	Energy that can be produced by Excess Capacity.
PGAB	The Scheduling Coordinator trade name for Pacific Gas & Electric Company
UES	The Utility Energy Services branch of Pacific Gas & Electric Company
WAMP	The Scheduling Coordinator trade name for Western Area Power Administration

Version History

Version	Change	By	Date
1.0	Drafted		12/18/00
2.0	Removed SMUD, PX and NCPA		12/18/02
2.1	Annual review, minor changes		12/15/03

TECHNICAL REVIEW

Reviewed By Content Expert	Signature	Date
OSAT		**12/15/03**
OE&M		**12/15/03**
Grid Ops		**12/23/02**
Market Ops		**12/26/02**
Scheduling		**12/20/02**

APPROVAL

Approved By	Signature	Date
Director of Engineering and Maintenance		**12/24/02**
Director of Grid Operations		**12/23/02**

*Approved version 2.0. Annual review for 2.1 with minor changes only.

APPENDIX

Attachment A: Background on E-516

Attachment B: Generation Information Reporting Contacts

Attachment C: Preferred Format For Submitting Data

Attachment D: Conditions & Limitations on Generation Dispatch

Attachment E: Contact Points For Obtaining Excess & Reserves